

10/532441

JC20 Rec'd PCT/PTO 22 APR 2005

1cfcc01!.TXT
SEQUENCE LISTING

<110> The Trustees of the University of Pennsylvania
<120> Identification of Antimycobacterial targets and the Inhibition
Thereof as a Treatment for Infectious Diseases
<130> UPFT0001-100
<150> PCT/US03/33524
<151> 2003-10-22
<150> US 60/420,131
<151> 2002-10-22
<160> 12
<170> PatentIn version 3.2
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<211> 463
<212> PRT
<213> M. tuberculosis H37RV
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Leu Lys Arg Ala Asp Val Asp Ile Lys Leu Ile Ala Arg Thr Thr His
35 40 45

His Leu Phe Gln Pro Leu Leu Tyr Gln Val Ala Thr Gly Ile Ile Ser
50 55 60

Glu Gly Glu Ile Ala Pro Pro Thr Arg Val Val Leu Arg Lys Gln Arg
65 70 75 80

Asn Val Gln Val Leu Leu Gly Asn Val Thr His Ile Asp Leu Ala Gly
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Gln Cys Val Val Ser Glu Leu Leu Gly His Thr Tyr Gln Thr Pro Tyr
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Asp Ser Leu Ile Val Ala Ala Gly Ala Gly Gln Ser Tyr Phe Gly Asn
115 120 125

Asp His Phe Ala Glu Phe Ala Pro Gly Met Lys Ser Ile Asp Asp Ala
130 135 140

Leu Glu Leu Arg Gly Arg Ile Leu Ser Ala Phe Glu Gln Ala Glu Arg
Page 1

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150

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155

160

Ser Ser Asp Pro Glu Arg Arg Ala Lys Leu Leu Thr Phe Thr Val Val
165 170 175Gly Ala Gly Pro Thr Gly Val Glu Met Ala Gly Gln Ile Ala Glu Leu
180 185 190Ala Glu His Thr Leu Lys Gly Ala Phe Arg His Ile Asp Ser Thr Lys
195 200 205Ala Arg Val Ile Leu Leu Asp Ala Ala Pro Ala Val Leu Pro Pro Met
210 215 220Gly Ala Lys Leu Gly Gln Arg Ala Ala Ala Arg Leu Gln Lys Leu Gly
225 230 235 240Val Glu Ile Gln Leu Gly Ala Met Val Thr Asp Val Asp Arg Asn Gly
245 250 255Ile Thr Val Lys Asp Ser Asp Gly Thr Val Arg Arg Ile Glu Ser Ala
260 265 270Cys Lys Val Trp Ser Ala Gly Val Ser Ala Ser Arg Leu Gly Arg Asp
275 280 285Leu Ala Glu Gln Ser Arg Val Glu Leu Asp Arg Ala Gly Arg Val Gln
290 295 300Val Leu Pro Asp Leu Ser Ile Pro Gly Tyr Pro Asn Val Phe Val Val
305 310 315 320Gly Asp Met Ala Ala Val Glu Gly Val Pro Gly Val Ala Gln Gly Ala
325 330 335Ile Gln Gly Ala Lys Tyr Val Ala Ser Thr Ile Lys Ala Glu Leu Ala
340 345 350Gly Ala Asn Pro Ala Glu Arg Glu Pro Phe Gln Tyr Phe Asp Lys Gly
355 360 365Ser Met Ala Thr Val Ser Arg Phe Ser Ala Val Ala Lys Ile Gly Pro
370 375 380Val Glu Phe Ser Gly Phe Ile Ala Trp Leu Ile Trp Leu Val Leu His
385 390 395 400

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Leu Ala Tyr Leu Ile Gly Phe Lys Thr Lys Ile Thr Thr Leu Leu Ser
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Trp Thr Val Thr Phe Leu Ser Thr Arg Arg Gly Gln Leu Thr Ile Thr
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<213> M. tuberculosis H37RV

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35 40 45

His Leu Phe Gln Pro Leu Leu Tyr Gln Val Ala Thr Gly Ile Leu Ser
50 55 60

Glu Gly Asp Ile Ala Pro Thr Thr Arg Leu Ile Leu Arg Arg Gln Lys
65 70 75 80

Asn Val Arg Val Leu Leu Gly Glu Val Asn Ala Ile Asp Leu Lys Ala
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Gln Thr Val Thr Ser Lys Leu Met Asp Met Thr Thr Val Thr Pro Tyr
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Asp Ser Leu Ile Val Ala Ala Gly Ala Gln Gln Ser Tyr Phe Gly Asn
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Asp Glu Phe Ala Thr Phe Ala Pro Gly Met Lys Thr Ile Asp Asp Ala
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Leu Glu Leu Arg Gly Arg Ile Leu Gly Ala Phe Glu Ala Ala Glu Val
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Ser Thr Asp His Ala Glu Arg Glu Arg Arg Leu Thr Phe Val Val Val
165 170 175

Gly Ala Gly Pro Thr Gly Val Glu Val Ala Gly Gln Ile Val Glu Leu
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Ala Glu Arg Thr Leu Ala Gly Ala Phe Arg Thr Ile Thr Pro Ser Glu
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Cys Arg Val Ile Leu Leu Asp Ala Ala Pro Ala Val Leu Pro Pro Met
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Gly Pro Lys Leu Gly Leu Lys Ala Gln Arg Arg Leu Glu Lys Met Asp
225 230 235 240

Val Glu Val Gln Leu Asn Ala Met Val Thr Ala Val Asp Tyr Lys Gly
245 250 255

Ile Thr Ile Lys Glu Lys Asp Gly Gly Glu Arg Arg Ile Glu Cys Ala
260 265 270

Cys Lys Val Trp Ala Ala Gly Val Ala Ala Ser Pro Leu Gly Lys Met
275 280 285

Ile Ala Glu Gly Ser Asp Gly Thr Glu Ile Asp Arg Ala Gly Arg Val
290 295 300

Ile Val Glu Pro Asp Leu Thr Val Lys Gly His Pro Asn Val Phe Val
305 310 315 320

Val Gly Asp Leu Met Phe Val Pro Gly Val Pro Gly Val Ala Gln Gly
325 330 335

Ala Ile Gln Gly Ala Arg Tyr Ala Thr Thr Val Ile Lys His Met Val
340 345 350

Lys Gly Asn Asp Asp Pro Ala Asn Arg Lys Pro Phe His Tyr Phe Asn
355 360 365

Lys Gly Ser Met Ala Thr Ile Ser Arg His Ser Ala Val Ala Gln Val
370 375 380

Gly Lys Leu Glu Phe Ala Gly Tyr Phe Ala Trp Leu Ala Trp Leu Val
385 390 395 400

Leu His Leu Val Tyr Leu Val Gly Tyr Arg Asn Arg Ile Ala Ala Leu
405 410 415

Phe Ala Trp Gly Ile Ser Phe Met Gly Arg Ala Arg Gly Gln Met Ala
420 425 430

Ile Thr Ser Gln Met Ile Tyr Ala Arg Leu Val Met Thr Leu Met Glu
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<213> M. tuberculosis CDC1551

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35 40 45

Val Ser Thr Val Glu Leu Thr Lys Ser Gly Ala Trp Cys Val Ala Ala
50 55 60

Asp Phe Ser Val Gly Met Leu Ala Ala Gly Ala Ala Arg Lys Val Pro
65 70 75 80

Lys Val Ala Gly Asp Ala Thr Arg Leu Pro Phe Gly Asp Asp Val Phe
85 90 95

Asp Ala Val Thr Ile Ser Phe Gly Leu Arg Asn Val Ala Asn Gln Gln
100 105 110

Ala Ala Leu Arg Glu Met Ala Arg Val Thr Arg Pro Gly Gly Arg Leu
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Leu Val Cys Glu Phe Ser Thr Pro Thr Asn Ala Leu Phe Ala Thr Ala
130 135 140

Tyr Lys Glu Tyr Leu Met Arg Ala Leu Pro Arg Val Ala Arg Ala Val
145 150 155 160

Ser Ser Asn Pro Glu Ala Tyr Glu Tyr Leu Ala Glu Ser Ile Arg Ala
165 170 175

Trp Pro Asp Gln Ala Val Leu Ala His Gln Ile Ser Arg Ala Gly Trp
180 185 190

Ser Gly Val Arg Trp Arg Asn Leu Thr Gly Gly Ile Val Ala Leu His
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35 40 45

Thr Trp Asp Leu Phe Arg Tyr Pro Gly Val Arg Ser Asp Ser Ser Ile
50 55 60

Phe Thr Leu Pro Phe Pro Tyr Glu Pro Trp Thr Arg Glu Glu Gly Ile
65 70 75 80

Ala Asp Gly Ala His Ile Arg Glu Tyr Leu Thr Asp Met Ala His Lys
85 90 95

Tyr Gly Ile Asp Arg His Ile Glu Phe Asn Ser Tyr Val Arg Ala Ala
100 105 110

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Asp Trp Asp Ser Ser Thr Asp Thr Trp Thr Val Thr Phe Glu Gln Asn
115 120 125

Gly Val His Lys His Tyr Arg Ser Arg Phe Val Phe Phe Gly Ser Gly
130 135 140

Tyr Tyr Asn Tyr Asp Glu Gly Tyr Thr Pro Asp Phe Gly Gly Ile Glu
145 150 155 160

Lys Phe Gly Gly Ala Val Val His Pro Gln His Trp Pro Glu Asp Leu
165 170 175

Asp Tyr Thr Gly Lys Lys Ile Val Val Ile Gly Ser Gly Ala Thr Ala
180 185 190

Val Thr Leu Ile Pro Ser Leu Thr Asp Arg Ala Glu Lys Val Thr Met
195 200 205

Leu Gln Arg Ser Pro Thr Tyr Leu Ile Ser Ala Ser Lys Tyr Ser Thr
210 215 220

Phe Ala Ala Val Val Arg Lys Ala Leu Pro Pro Lys Thr Ser His Leu
225 230 235 240

Ile Val Arg Met Tyr Asn Ala Leu Leu Glu Ala Val Phe Trp Phe Leu
245 250 255

Ser Arg Lys Thr Pro Val Phe Val Lys Trp Leu Leu Arg Arg Thr Ala
260 265 270

Ile Lys Asn Leu Pro Glu Gly Tyr Asp Ile Glu Thr His Phe Thr Pro
275 280 285

Arg Tyr Asn Pro Trp Asp Gln Arg Leu Cys Leu Ile Pro Asp Ala Asp
290 295 300

Leu Tyr Asn Ala Ile Thr Ser Gly Arg Ala Glu Val Val Thr Asp His
305 310 315 320

Ile Asp His Phe Asp Ala Thr Gly Ile Ala Leu Lys Ser Gly Gly His
325 330 335

Leu Asp Ala Asp Ile Ile Val Thr Ala Thr Gly Leu Gln Leu Gln Ala
340 345 350

Leu Gly Gly Ala Ala Ile Ser Leu Asp Gly Val Glu Ile Asp Pro Arg
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355

360

365

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 370 375 380

Phe Trp Cys Val Gly Tyr Thr Asn Ala Ser Trp Thr Leu Arg Ala Asp
 385 390 395 400

Met Thr Ala Arg Ala Thr Ala Lys Leu Leu Ala His Met Ala Ala His
 405 410 415

Gly His Thr Arg Ala Ala Pro His Leu Gly Asp Glu Pro Met Asp Glu
 420 425 430

Lys Pro Ser Trp Asp Ile Gln Ala Gly Tyr Val Lys Arg Ala Pro Tyr
 435 440 445

Ala Leu Pro Lys Ser Gly Thr Lys Arg Pro Trp Asn Val Arg Gln Asn
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Met Val Phe Gly Ala Ala
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 35 40 45

Glu Gly Gly Ala Ala Ala Val Thr Gly Asp Asp Asp Ser Leu Asp Glu
 50 55 60

His Ala His Asp Thr Val Ser Gly Gly Asp Trp Leu Cys Asp Gln Asp
 65 70 75 80

Ala Val Glu Ala Phe Val Ala Glu Ala Pro Lys Glu Leu Val Gln Leu
 85 90 95

Glu His Trp Gly Cys Pro Trp Ser Arg Lys Pro Asp Gly Arg Val Ala
 100 105 110

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Val Arg Pro Phe Gly Gly Met Lys Lys Leu Arg Thr Trp Phe Ala Ala
115 120 125

Asp Lys Thr Gly Phe His Leu Leu His Thr Leu Phe Gln Arg Leu Leu
130 135 140

Thr Tyr Ser Asp Val Met Arg Tyr Asp Glu Trp Phe Ala Thr Thr Leu
145 150 155 160

Leu Val Asp Asp Gly Arg Val Cys Gly Leu Val Ala Ile Glu Leu Ala
165 170 175

Thr Gly Arg Ile Glu Thr Ile Leu Ala Asp Ala Val Ile Leu Cys Thr
180 185 190

Gly Gly Cys Gly Arg Val Phe Pro Phe Thr Thr Asn Ala Asn Ile Lys
195 200 205

Thr Gly Asp Gly Met Ala Leu Ala Phe Arg Ala Gly Ala Pro Leu Lys
210 215 220

Asp Met Glu Phe Val Gln Tyr His Pro Thr Gly Leu Pro Phe Thr Gly
225 230 235 240

Ile Leu Ile Thr Glu Ala Ala Arg Ala Glu Gly Gly Trp Leu Leu Asn
245 250 255

Lys Asp Gly Tyr Arg Tyr Leu Gln Asp Tyr Asp Leu Gly Lys Pro Thr
260 265 270

Pro Glu Pro Arg Leu Arg Ser Met Glu Leu Gly Pro Arg Asp Arg Leu
275 280 285

Ser Gln Ala Phe Val His Glu His Asn Lys Gly Arg Thr Val Asp Thr
290 295 300

Pro Tyr Gly Pro Val Val Tyr Leu Asp Leu Arg His Leu Gly Ala Asp
305 310 315 320

Leu Ile Asp Ala Lys Leu Pro Phe Val Arg Glu Leu Cys Arg Asp Tyr
325 330 335

Gln His Ile Asp Pro Val Val Glu Leu Val Pro Val Arg Pro Val Val
340 345 350

His Tyr Met Met Gly Gly Val His Thr Asp Ile Asn Gly Ala Thr Thr
355 360 365

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Leu Pro Gly Leu Tyr Ala Ala Gly Glu Thr Ala Cys Val Ser Ile Asn
370 375 380 385

Gly Ala Asn Arg Leu Gly Ser Asn Ser Leu Pro Glu Leu Leu Val Phe
385 390 395 400

Gly Ala Arg Ala Gly Arg Ala Ala Asp Tyr Ala Ala Arg His Gln
405 410 415

Lys Ser Asp Arg Gly Pro Ser Ser Ala Val Arg Ala Gln Ala Arg Thr
420 425 430

Glu Ala Leu Arg Leu Glu Arg Glu Leu Ser Arg His Gly Gln Gly Gly
435 440 445

Glu Arg Ile Ala Asp Ile Arg Ala Asp Met Gln Ala Thr Leu Glu Ser
450 455 460

Ala Ala Gly Ile Tyr Arg Asp Gly Pro Thr Leu Thr Lys Ala Val Glu
465 470 475 480

Glu Ile Arg Val Leu Gln Glu Arg Phe Ala Thr Ala Gly Ile Asp Asp
485 490 495

His Ser Arg Thr Phe Asn Thr Glu Leu Thr Ala Leu Leu Glu Leu Ser
500 505 510

Gly Met Leu Asp Val Ala Leu Ala Ile Val Glu Ser Gly Leu Arg Arg
515 520 525

Glu Glu Ser Arg Gly Ala His Gln Arg Thr Asp Phe Pro Asn Arg Asp
530 535 540

Asp Glu His Phe Leu Ala His Thr Leu Val His Arg Glu Ser Asp Gly
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